

EDITION

20

ILLUSTRATED IN FULL COLOR

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(For April)

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CYCLOPEDIA

MEDICAL

DICTIONARY

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PHILADELPHIA

Co Symbol for the element cobalt.

Co1 *coccygeal spinal nerve*.

CoA Coenzyme A.

coacervate (kō-ās'ēr-vāt) [L. *coacervatus*, heaped up] The formation of an aggregate in a solution that is about to emulsify or in an emulsion that is demulsifying.

coadaptation (kō-ād-āp-tā'shūn) Mutual adaptation of two independent organisms, organs, or persons.

coadministration (cō-ād-mīn-ī-strā'shūn) The giving of two or more therapeutic agents at the same time.

coagglutination (kō-ā-gloo'ūn-ā'shūn) [L. *coagulare*, to curdle] Use of latex or other inert particles to which an antibody will bind in laboratory tests of agglutination.

coagula (kō-āg'ū-lā) [L.] Pl. of coagulum.

coagulability (kō-āg'ū-lā-bīl'ī-tē) The capacity to form clots, esp. blood clots.

coagulable (kō-āg'ū-lā-bīl) Capable of clotting; likely to clot.

coagulant (kō-āg'ū-lānt) [L. *coagulans*, congealing] 1. Something that causes a fluid to coagulate. 2. Causing coagulation.

coagulase (kō-āg'ū-lāz) [L. *coagulum*, blood clot] Any enzyme, such as thrombin, that causes coagulation.

coagulate (kō-āg'ū-lāt) [L. *coagulare*, to congeal] To solidify; to change from a fluid state to a semisolid mass.

coagulated (kō-āg'ū-lāt-ēd) Clotted or curdled.

coagulation (kō-āg'ū-lā'shūn) [L. *coagulation*, clotting] The thickening of a liquid into a gel or solid.

blood c. The process of clumping together of blood cells to form a clot. This may occur in vitro, intravascularly, or when a laceration of the skin allows the escape of blood from an artery, vein, or capillary. Coagulation of blood may occur in two pathways, depending on the beginning of the process.

Extrinsic: The extrinsic pathway (in an abbreviated outline form) requires the blood to be exposed to a subendothelial tissue factor originating outside the blood. This factor begins a complex series of chemical reactions involving thromboplastin, factor VII, and calcium; binding to factor X, causing its conversion to factor Xa; and the resulting conversion of prothrombin to thrombin to fibrinogen and eventually fibrin.

Intrinsic: The intrinsic pathway (in abbreviated outline form) occurs when blood is drawn without contamination by tissue factor. This clotting pathway does not require an additive. It is triggered when the blood is exposed to a foreign surface and factor XII is activated. Factor XII may also be activated through limited cleavage by kallikrein.

This process is accelerated by high-molecular-weight kininogen (HMWK). This leads to formation of factor XII, a process that produces more HMWK to accelerate kallikrein production. The process continues and factors XI and IX, and HMWK, in concert with calcium, generate factor Xa. The clotting cascade then continues as in the extrinsic pathway, and prothrombin is converted to thrombin, which acts on fibrinogen to produce fibrin. SEE: illus.

coagulator (kō-āg'ū-lāt'ōr) 1. A surgical device that utilizes electrical current, light energy, ultrasound, etc., to stop bleeding. 2. A pharmacological substance used to induce hemostasis or solidification of proteinaceous fluids.

argon beam c. A surgical instrument used to cut or cauterize tissues, which relies on a jet of argon gas to carry electrons into the operative field.

infrared c. A surgical instrument that focuses infrared light energy to cut or damage tissues or to stop bleeding. The device has been used in skin surgery, hair transplantation, ablation of abnormal cardiac conduction pathways, and treatment of internal hemorrhoids, among other applications.

microwave c. A surgical instrument that focuses microwave energy through an antenna to cut or cauterize tissue. The device can be used in open or laparoscopic surgeries.

coagulopathy (kō-āg'ū-lōp'ā-thē) [Gr. *pathos*, disease, suffering] A defect in blood-clotting mechanisms. SEE: *coagulation, blood*.

consumption c. Disseminated intravascular coagulation.

coagulum (kō-āg'ū-lūm) pl. **coagula** [L.] A coagulated mass, clot, or precipitate.

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coalescence (kō-āl-ēs'ēns) The fusion or growing together of two or more body parts.

coal worker's pneumoconiosis ABBR: CWP. A form of pneumoconiosis in which carbon and silica accumulate in the lungs as a result of breathing coal dust. SYN: *black lung*.

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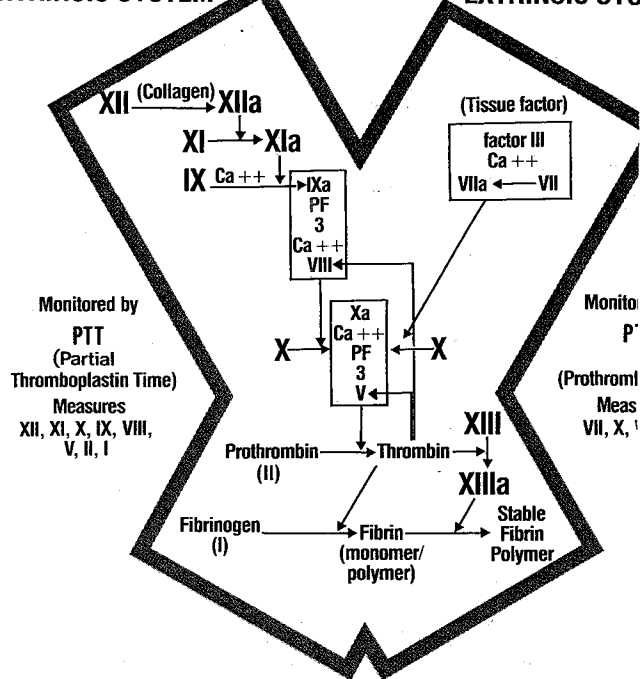
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COAGULATION CASCADE

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coating (kōt'ing) 1. A layer applied to or covering a surface. 2. A film.

Coats' disease (kōtz) [George Coats, Brit. ophthalmologist, 1876-1915] The development of large white masses deep in the blood vessels of the retina. This term is now used to describe at least six separate retinal disorders.

cobalamin (kō-bāl'ā-mīn) Another name for vitamin B₁₂, a complex molecule containing one atom of cobalt. SEE: *cyanocobalamin*.

cobalt (kō'bālt) SYMB: Co. A gray, hard, ductile metallic chemical element; atomic weight 58.933, atomic number 27, specific gravity 8.9. Cobalt deficiency causes anemia in ruminants, but this has not been demonstrated in humans.

Cobalt is an essential element in vitamin B₁₂. Cobalt stimulates production of red blood cells, but its use as a thera-

peutic agent is not advised. cobalt overdose may cause adults, it may cause anorexia, vomiting, deafness, and thymic atrophy with resultant compression of the trachea.

cobalt-57 A radioactive isotope with a half-life of 272 days.

cobalt-60 A radioactive isotope used as a source of beta rays in treating malignant tumors. half-life of 5.27 years.

Coban Trade name for a compression bandage used for edema control.

Coban wrap.

Cobb angle The angle formed by the intersection of two lines drawn on a radiograph of a person (usually an adolescent) suspected of scoliosis. One line is drawn parallel to the lower surface of the lowest thoracic vertebra, and the other is parallel to the upper surface of the affected vertebra. Angles of greater than 10° are diagnostic of scoliosis.

cobra (kō'brā) Any one of a group of venomous snakes native to Asia and Africa. They all have the ability to expand the neck into a flat shield.

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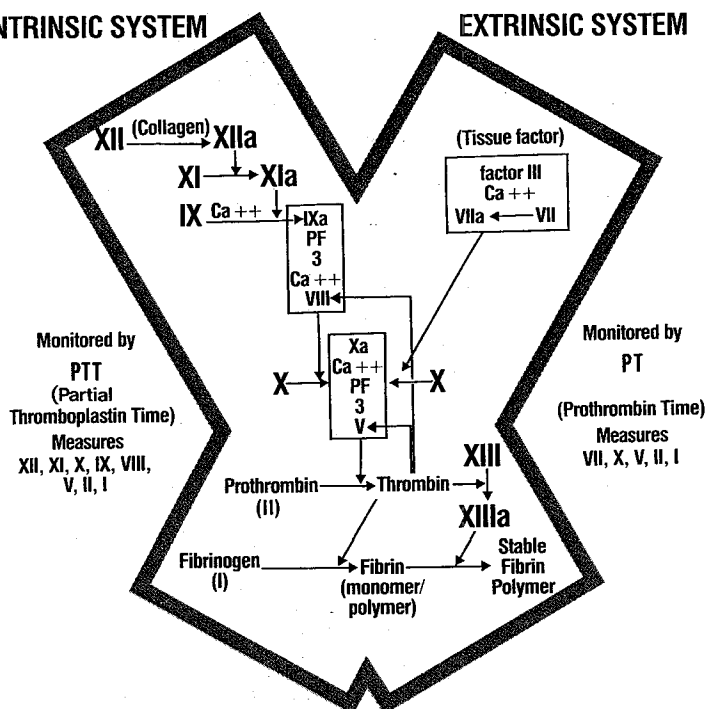
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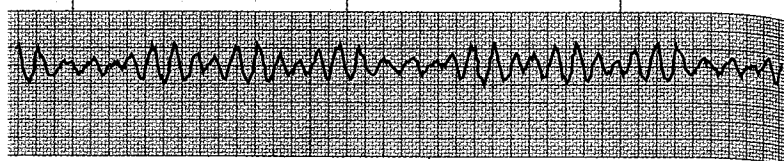
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COBS cesarean-obtained barrier-sus- tained.



VENTRICULAR FIBRILLATION

most patients with atrial fibrillation with a rapid ventricular response, controlling the rapid heart rate alleviates symptoms. Electrical or chemical cardioversion of initial episodes of atrial fibrillation may successfully restore sinus rhythm, often for a period of several months to as long as a year. Anticoagulation (e.g., with warfarin) markedly reduces the risk of stroke and should be given for several weeks before, and about a week after, elective cardioversion, and to patients in chronic AF who do not return to sinus rhythm with treatment. Patients who elect not to use anticoagulants for chronic AF, or in whom anticoagulants pose too great a risk of bleeding, usually are given 325 mg of aspirin daily. AF can also be treated with radiofrequency catheter ablation, or with surgical techniques to isolate the source of the rhythm disturbance in the atria. SEE: *ablation*.

PATIENT CARE: The acutely ill patient is placed on bedrest and monitored closely, with frequent assessments of vital signs, oxygen saturation, heart rate and rhythm, and 12-lead electrocardiography. Supplemental oxygen is supplied and intravenous access established. Preparations for cardioversion (if necessary) and the medications prescribed for the patient are explained. Patients should be carefully introduced to the risks, benefits, and alternatives to stroke prevention with anticoagulation. Stroke is one of the most serious complications for patients with atrial fibrillation. The risk of embolic stroke in AF is about 5% annually without anticoagulation but lower with it. However, the use of anticoagulants increases the risk of bleeding. Aspirin may occasionally be used with or without anticoagulants. It decreases the risk of stroke in AF somewhat less effectively than anticoagulant drugs. Patients treated with anticoagulants should maintain an International Normalized Ratio (INR) in the 2.0 to 3.0 range. Regular assessment of the INR reduces the hazard of serious bleeding.

lone atrial f. Atrial fibrillation that is not caused by or associated with underlying disease of the heart muscle, heart valves, coronary arteries, pulmonary circulation, or thyroid gland. Prognosis seems better for this type of atrial fib-

rillation than for that which results from anatomical or metabolic abnormalities.

paroxysmal atrial f. Intermittent episodes of atrial fibrillation.

ventricular f. ABBR: VFIB. A treatable, but lethal dysrhythmia present in nearly half of all cases of cardiac arrest. It is marked on the electrocardiogram by rapid, chaotic nonrepetitive waveforms; and clinically by the absence of effective circulation of blood (pulselessness). Rapid defibrillation (applying unsynchronized electrical shocks to the heart) is the key to treatment. Basic measures, such as opening the airway and providing rescue breaths and chest compressions, should be undertaken until the defibrillator is available. SEE: *illus.*; *defibrillation*; *advanced cardiac life support*.

fibrillin (fī'bril-in) A protein constituent of connective tissue. It is present in skin, ligaments, tendons, and in the aorta. In Marfan's syndrome, there is reduced content of microfibrils that contain fibrillin. SEE: *elastin*.

fibrillogenesis (fī-bril'ō-jēn'ē-sis) Formation of fibrils.

fibrin (fī'brīn) [L. *fibra*, fiber] A whitish, filamentous protein formed by the action of thrombin on fibrinogen. The conversion of fibrinogen to fibrin is the third and final stage of blood clotting. The fibrin is deposited as fine interlacing filaments which entangle red and white blood cells and platelets, the whole forming a coagulum, or clot. SEE: *coagulation*, *blood*, *fibrinous*, *adj.*

fibrin-fibrinogen degradation products A group of soluble protein fragments produced by the proteolytic action of plasmin on fibrin or fibrinogen. These products impair the hemostatic process and are a major cause of hemorrhage in intravascular coagulation and fibrinolysis.

fibrin glue Fibrinogen concentrate combined with bovine thrombin. It may be applied topically to stop bleeding, esp. during surgery. It also may be injected into a variety of fistulae with some degree of success. Autologous fibrinogen (as cryoprecipitate) mixed with calcium chloride and bovine thrombin will result in fibrin glue. Commercially available is fibrin sealant composed of human plasma and bovine-derived components.